

Date: Wednesday, 4/30/2008 10:48:37 AM  
 User: Chantal Lavoie

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : SHORT STEP ASSEMBLY
<b>Job Number</b> : 38908	
<b>Estimate Number</b> : 11672	
<b>P.O. Number</b> :	<b>Part Number</b> : D350591121
<b>This Issue</b> : 4/30/2008 <b>S.O. No.</b> :	<b>Drawing Number</b> : D2351 UNDER REVIEW <i>PH</i>
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A <i>08.12.22</i>
<b>First Issue</b> : / / <b>Type</b> : LARGE FAB ASSY	<b>Drawing Revision</b> : E
<b>Previous Run</b> : 37894	<b>Material</b> :
<b>Written By</b> :	<b>Due Date</b> : 5/7/2008 <b>Qty:</b> 2 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> : <i>JLD 08.4.30</i>	
<b>Comment</b> : Est Rev:E 02.10.21 Re-format; Incorporated D2351-041 IPP K J/RF est rev. F 06.02.23 added grinding EC	

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
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1.0

DC

DOCUMENT CONTROL

*for JLD 08/4/30***Comment:** DOCUMENT CONTROL

Photocopy bluefile and type labels as per PPP D350-591-121GHC005

*CHG004**S09/01/13*

2.0

D2244116

Step Extrusion

**Comment:** Qty.: 0.5000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

0.5 D2244-116 Extrusion *B33733**SAD 08/04/30**(2)*

3.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1

**Comment:** LARGE FABRICATION RESOURCE 1

1-Cut D2244-116 extrusion to 55.32" long as per Dwg D2351 using cutting table setup DT8185-G

2-Drill extrusion per Dwg D2351 using Jig DT8230 for rivets.

3-Deburr

*SAD 08/04/30**(2)*

4.0

BENDING

BENDING MACHINE - SKIDTUBES

**Comment:** BENDING MACHINE

Bend per Dwg D2351 using Bend Program D23561dD FT011

*EL 8-5-1*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Drawing Name: SHORT STEP ASSEMBLY

Job Number: 38908

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/05/12 (2)

6.0

D28501

End Bracket



Comment: Qty.: 1.0000 Each(s)/Unit Total: 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2850-1 End Bracket 326919

PL 08.12.18

7.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Bevel Fwd and Aft end for welding

PL 08.12.18

2-Weld Aft End Bracket per QSI 004 & Dwg D2351 using Welding Jig DT8033

A/R Aluminum Rod M109560

PL 08.12.18

3-Do not Grind Flush

8.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

PL 08.12.18

BE 08-12-19 (2)

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08-12-22 (2)

08/12/19 (4)

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

08.12.22

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

SAD 08-12-23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Drawing Name: SHORT STEP ASSEMBLY

Job Number: 38908

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

D2582

Step Leg Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2582

Step Leg Assy

37925 (1)  
B40087 (1)

SAD 08-12-23

(2)

13.0

MS20600AD4W3

Cherry Rivets



Comment: Qty.: 16.0000 Each(s)/Unit Total : 32.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

16 MS20600AD4W3

Rivet

M10298

SAD 08-12-23

(2)

14.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Rivet Leg Assembly as per Dwg D2351

SAD 08-12-23

(2)

15.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

09/01/07 x2

16.0

D267334

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2673-34 End Plate

B35889

09-01-07 2

17.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld Fwd End Plate per QSI 004 & Dwg D2351

A/R

Aluminum Rod

M108037

09-01-07 2

2-Grind end cap flush per dwg D2351

SAD 09-01-08 (2)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Job Number: 38908

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

BF 07-01-08

19.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 02/01/08

20.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1  
Touch up Alodine

M-1

09/01/10

21.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

11:45  
320 OF  
12:15

M-1

09/01/10

22.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Wing Walk per Dwg D2351 and QSI 005 4.4

Batch: M 109917

FL 09/01/12

23.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

S 09/01/13

24.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

25.0

D22301

Lug



Comment: Qty.: 1.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Packing Kit Qty Part Number Description Batch

B43444

S 09/01/13

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Drawing Name: SHORT STEP ASSEMBLY

Job Number: 38908

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description:

1 D2230-1 Mounting Lug

26.0

D22303

Lug



Comment: Qty.: 1.0000 Each(s)/Unit Total: 2.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch

1 D2230-3 Mounting Lug 43223

SS 09/01/13

27.0

D2856400

Abrasion Strip



Comment: Qty.: 0.6000 f(s)/Unit Total: 1.2000 f(s)

Pick:

Packing KitQty Part Number Description Batch

1 D2856-400 7.20" Abrasion Strip 42076

SS 09/01/13

28.0

AN337A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total: 4.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch

2 AN3-37A Bolt B105425

SS 09/01/13

29.0

AN413A

Bolt



Comment: Qty.: 3.0000 Each(s)/Unit Total: 6.0000 Each(s)

AN4-13A

Batch: 109285

SS 09/01/13

30.0

AN960JD10

Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total: 8.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch

4 AN960JD10 Washer 109061

SS 09/01/13

31.0

AN960JD416

Washer



Comment: Qty.: 6.0000 Each(s)/Unit Total: 12.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch

6 AN960JD416 Washer 69249

SS 09/04/13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Job Number: 38908

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description :

32.0

MS21042L3

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch

2 MS21042L3 Nut (or -3) M108816

SS 09/01/13 (K2)

33.0

MS21042L4

Nut



Comment: Qty.: 3.0000 Each(s)/Unit Total : 6.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch

3 MS21042L4 Nut (or -4) M109282

SS 09/01/13 (K2)

34.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

SS 09/01/13 (K2) (K2)

35.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-591-121

Location:

PPP Rev:

80 D

9/1/13

SP

36.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/01/13 (K2)

Job Completion



MF 09-01-15

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

DESIGN KE	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D2351	REV. E SHEET 1 OF 2
DATE 05.11.14		TITLE HIGH FLOAT STEP ASSEMBLY	SCALE NTS
A	95.02.15	NEW ISSUE	
B	97.05.22	END CAPS CHANGED	
C	97.07.23	ADDED BUSHING AND FACING INFO	
D	98.12.17	CHANGED TO BEND, D2850 REPLACES D2357 & D2358, INCORP. DEO 9084	
E	05.11.14	UPDATE FINISHING NOTE	

**D2351 HIGH FLOAT STEP ASSEMBLY PARTS LIST**

Part No.	Description	QTY -041	QTY -042
D2351-041	High Float Step Assembly (LH)	X	
D2351-042	High Float Step Assembly (RH)		X
D2244-55.4	STEP EXTRUSION*	1	1
D2582	STEP LEG ASSEMBLY	1	1
D2673-34	STEP END PLATE	1	1
D2850-1	END BRACKET	1	
D2850-2	END BRACKET		1
MS20600AD4W3	RIVETS	16	16

\*cut per drawing

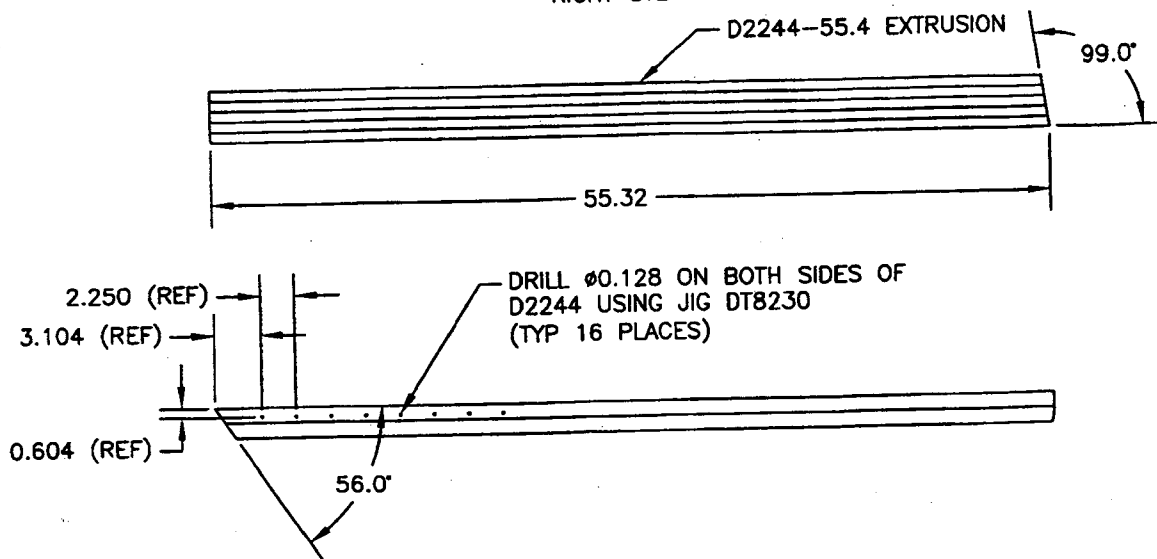
SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. ~~38573~~  
389080 L

**RELEASED**  
05.11.28 #**UNDER REVIEW**PH  
03.04.1407.11.24  
PER KCR# 263

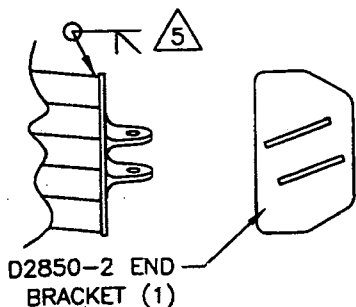
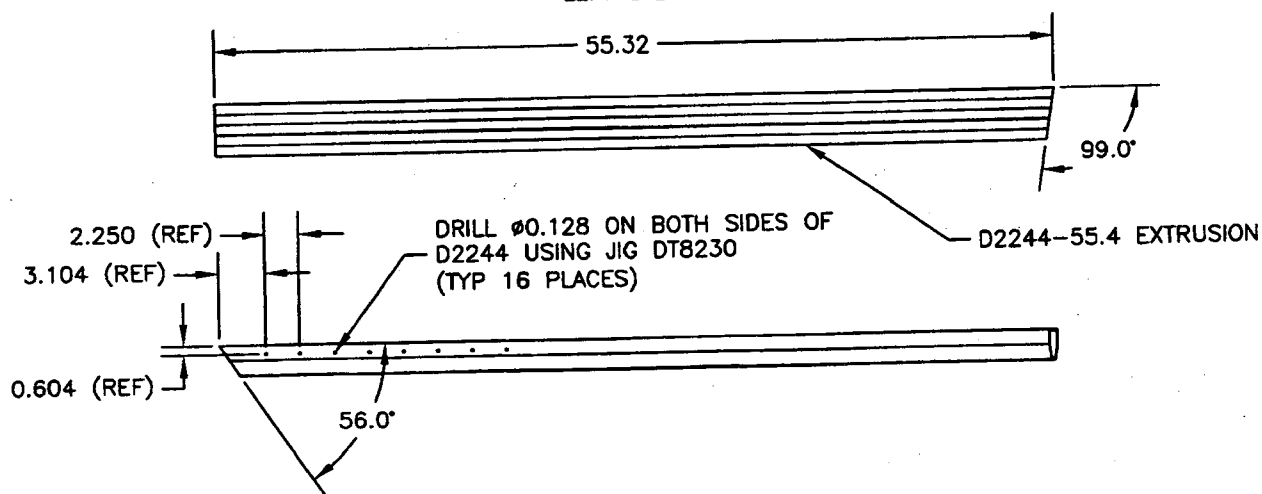
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**D2351-2 CUTTING/DRILLING DETAIL  
RIGHT STEP**



**D2351-1 CUTTING/DRILLING DETAIL  
LEFT STEP**



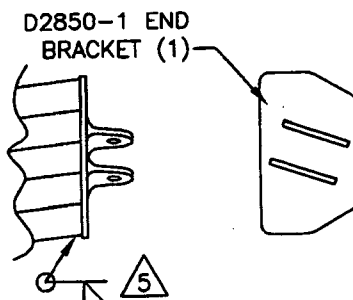
**DETAIL A**

SCALE: 1:4

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. ~~38573~~

38708 *cd*



**DETAIL B**

SCALE: 1:4

D2582 STEP LEG ASSEMBLY (1)



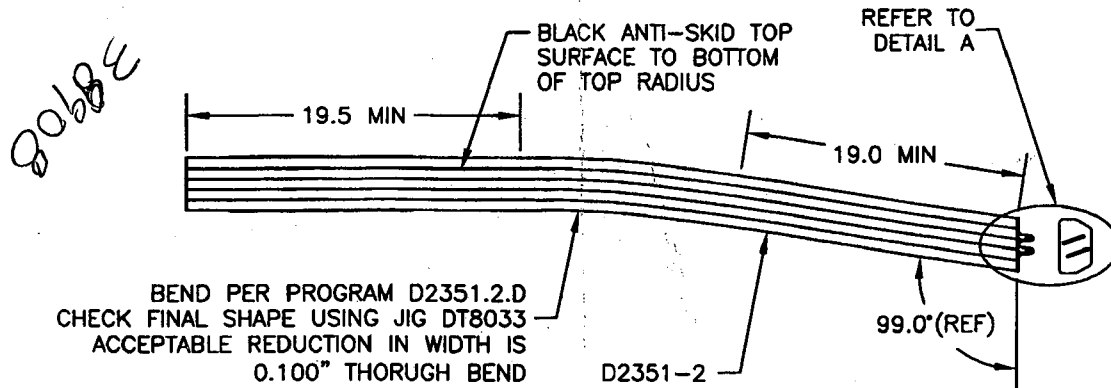
**GENERAL NOTES**

- 1) WELD PER DART QSI 004
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART Q  
POWDER COAT GLOSS WHITE (4.3.5.1) PEF  
BLACK ANTI-SKID PAINT PER DART QSI 0C
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE SPECIFIED

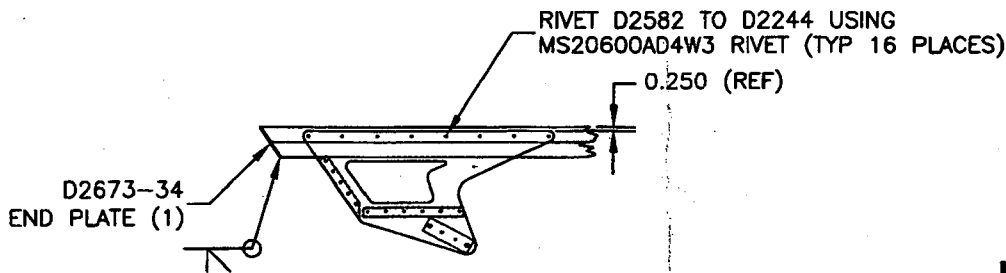
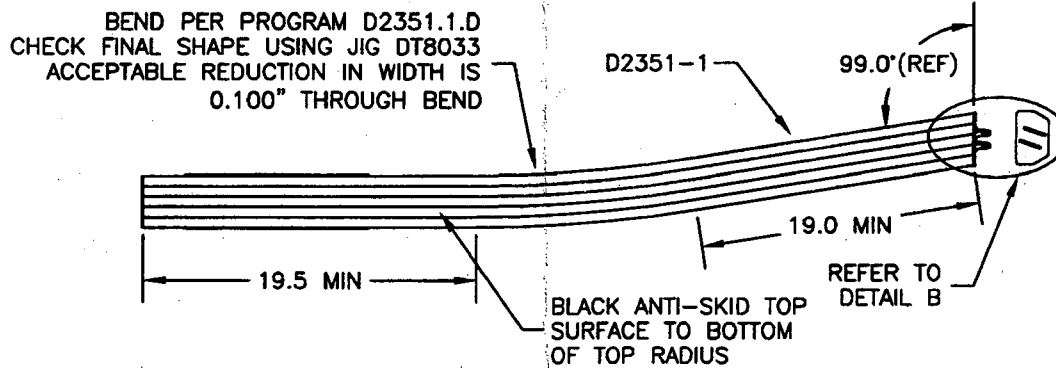


CHAMFER D2244 EXTRUSION 0.075"x45° BEFORE WE  
D2850-2 IN PLACE. DO NOT GRIND FLUSH.

D2351-042 BENDING/ASSEMBLY DETAIL  
RIGHT STEP



D2351-041 BENDING/ASSEMBLY DETAIL  
LEFT STEP



**RELEASED**  
05.11.28

**UNDER REVIEW**

005 4.3

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DESIGN KE	DRAWN BY PH	<b>DART</b>	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D2351	REV. E
DATE 05.11.14	TITLE HIGH FLOAT STEP ASSEMBLY	SHEET 2 OF 2	SCALE 1:12